Memo

To: *Environment and Natural Resources Committee*

From: *State Planning Office*

Re: *Response to Committee Questions on Solid Waste and Recycling*

Date: *January 19, 2011*

Introduction

The Natural Resources Committee was authorized by the Legislative Council to meet in the interim between the 124th and 125th legislative sessions. The Committee held four meetings during May and June of 2010 to consider selected solid waste policy issues. Following the meetings, the Committee requested further information from the State Planning Office and the Department of Environmental Protection on the four questions below.

This document provides a response to the Committee's questions from the State Planning Office. No official resolve was issued by the Committee; however we have provided written responses to the four questions the committee raised, and added a fifth item for committee consideration.

Question 1: Corrugated Cardboard Recycling

> *"The Committee requested the State Planning Office, with the DEP, to thoroughly analyze the recovery and recycling of corrugated cardboard so the 125th Legislature can have sufficient information to consider recycling of all commercial and residential cardboard via a disposal ban or recycling mandate. The analysis should include the economics of the proposal, including the amount of money municipalities will save, the amount of cardboard captured, and necessary education and input from interested parties, including Maine Municipal Association, merchants and waste haulers." (Minutes of Joint Standing Committee on Natural Resources, June 22, 2010.)*

Analysis of a Disposal Ban on Corrugated Cardboard:

Option 1: All commercially and residentially generated corrugated cardboard would be recycled via a statewide disposal ban.

Option 2: All municipalities with a population of 2000 or greater would be required to comply with a state's disposal ban on commercial and residential generated corrugated cardboard.

Either Option 1 or Option 2 above, if accepted, are recommended to be implemented over a period of two to four years to provide municipalities and businesses necessary time to prepare for the change.

Rationale:

The rationale behind the options presented above is threefold:

1. To reduce the amount of waste requiring disposal, thus delaying the development of additional landfill disposal capacity, which is estimated to be currently approximately $25 per cubic yard;
2. To increase the statewide recycling rate by approximately 4 to 6 percentage points; and
3. To avoid municipal disposal costs for the corrugated cardboard and increasing recycling revenue for municipal programs.

Current Situation:

There is a favorable market for recycled corrugated cardboard, with its value ranging from $80-$170 per ton. The average per ton value for corrugated cardboard in June of 2010 was $116 per ton; it is now $165 per ton.

Effect on the State's Waste Stream and Recycling Rate:

79,455 tons of corrugated cardboard were recycled as corrugated cardboard in 2009; additional corrugated cardboard tonnage was included in 'single stream' recycling program tonnages but separate tonnage numbers are not available.

A disposal ban could divert an additional 40-50,000 tons of corrugated cardboard for recycling. Of this, municipal programs would be expected to handled approximately 16,000 to 20,000 tons of that total and the balance, 20,000 to 30,000 tons would be handled by commercial recyclers.

The statewide recycling rate could increase by 4 to 6 percentage points, from 38.7% to perhaps 43 to 44%, bringing us closer to our recycling goal of 50%.

Business Economics:

As part of the sweeping 1989 solid waste legislation, businesses with more than 15 employees at a single location were required to separate office paper and corrugated cardboard from their

wastes and recycle those materials. A disposal ban on corrugated cardboard would require all businesses, regardless of size, to separate corrugated cardboard from their trash and recycle it.

How a business recycles their corrugated cardboard would be their choice: they could hire a firm to haul away and process the corrugated cardboard for recycling; they could haul or have it hauled to a municipal recycling facility for processing and recycling; or they could install a baler and process and sell their cardboard on the recycling market. The actual cost of implementing this requirement will vary from community to community and region to region, based on the availability of haulers to assist businesses and the proximity of the selected recycling facility site where the corrugated cardboard will be processed. Communities with single stream recycling programs that accept business generated recyclables could have the least financial impact to businesses. The disposal ban could also encourage the development or creation of 'niche' service providers, who could also accept and manage the additional recyclables from businesses.

Keeping the corrugated cardboard separate and recycling it could result in small upfront management costs to business, but the recovery of this easily managed component of the waste stream would reduce disposal and landfill construction costs and increase recycling efforts, as well as aid in conserving material and energy resources. If a business is currently disposing of their corrugated cardboard they are currently paying for managing it and associated disposal fees. Keeping corrugated cardboard separate from the trash should not add significant cost to business. Exceptions would include businesses not able to easily access a recycling center or businesses in towns with high recycling fees where businesses are unable to realize any portion of the avoided disposal costs or recycling revenues themselves. In these cases, a private hauler may be able to offer a more attractive option.

Municipal Economics:

As an example to better understand the economics of recycling this additional corrugated cardboard, let us consider an average municipal recycling program that currently recycles 150 tons of corrugated cardboard annually. This program would currently gross $24,750 annually from sales of recyclable corrugated cardboard, at 2010's average value of $116 per ton. The combined avoided costs of disposal and revenues from sales, shown in Table below, would currently be $25,350 annually for the town. The calculation below is based on the 2010 average price paid for recycled cardboard of $116 per ton. With the disposal ban on corrugated cardboard, and an estimated 50% increase in tonnage recycled (assuming both residents and businesses deliver their corrugated cardboard to the recycling facility), the combined avoided costs of disposal and revenues from sale of the corrugated cardboard would be $38,025.00 per year.

ESTIMATED COSTS OF MSW DISPOSAL

Disposal Fees	$55.00	
Transport	$16.00	(60 miles)
Transfer station	$22.00	
Total Cost Per Ton:	$93.00	

IMPACT ON MUNICIPALITIES, WITHOUT THE DISPOSAL BAN ON CORRUGATED CARDBOARD

Avoided cost of disposal	$93.00	(From above)
Recycling revenue	$116.00	
Cost of processing recyclables	($40.00)	
Net Impact	$169.00	Per Ton
Net Impact	$25,350.00	At 150 Tons Recycled Annually

IMPACT ON MUNICIPALITIES, WITH THE DISPOSAL BAN ON CORRUGATED CARDBOARD

Avoided cost of disposal	$93.00	(From above)
Recycling revenue	$116.00	
Cost of processing recyclables	($40.00)	
Net Impact	$169.00	Per Ton
Net Impact	$38,025.00	At 225 Tons Recycled Annually

Education, Outreach and Expanding Municipal Facilities:

Should a disposal ban on corrugated cardboard be implemented, a 2-4 year ramp up period is recommended, prior to the ban becoming effective. During this time, the Office, in coordination with various trade and business associations, would conduct outreach activities and provide assistance to businesses and municipalities. This outreach can be provided by reprioritizing activities for existing staff.

There are 495 municipalities in Maine, with approximately 320 various recycling programs amongst them. Some municipalities have their own recycling program while others work as a group or region to provide recycling services to their residents and businesses.

There are 145 recycling centers that process the majority of the municipally managed recyclables, which includes corrugated cardboard. It is estimated that about one fourth of these centers, about 35, would require some upgrade to their center, processing ability or bale storage to adequately accept and manage the additional corrugated cardboard resulting from its ban on disposal.

Using an average cost of $25,000 to effect the recycling center's improvements, and estimating 35 facilities, approximately $900,000 would be needed to complete these improvements. No local cost share is anticipated being required for municipal program changes, so the total funding would be required from the state.

Question 2: Composting Food Waste

> *"The Committee heard a presentation from the State Planning Office on composting food waste. In the ensuing discussion, the Committee learned that the DEP was in the process of pulling together an EPA grant proposal for a pilot municipal food composting project and asked them to brief the 125th legislature on the progress of the project." (From the Minutes of the Joint Standing Committee on Natural Resources Meeting, June 22, 2010.)*

Introduction:

The State Planning Office offers the following guidance and comments on the composting of food discards:

Composting offers an economically attractive alternative to landfilling or incineration of food scraps and other organic materials which together make up approximately 25% of Maine's municipal solid waste. Composting can reduce the volume of waste disposed and reduce disposal costs, but has high handling and equipment costs at the municipal level. Composting produces a high value end product for which there is a strong local and regional market.

While the EPA grant proposal mentioned above was not funded, the State has undertaken a number of on-going activities to educate and promote composting food waste. A summary of composting initiatives is given below. It should also be noted that many institutions, particularly college dining facilities, have successfully initiated food composting programs.

Background and Overview of Composting Initiatives:

The State Planning Office, in collaboration with the Maine DEP, works to promote food waste composting activities by municipalities, businesses and institutions. While not yet widespread, food waste composting is not in its infancy. The Office and DEP have undertaken considerable research and piloting efforts to encourage and promote this worthwhile activity. The State Planning Office's role is to assist with facility planning, set-up and the management, education and quality needs of the source separation of organics intended for composting. DEP ensures that compost operations and their products pose no environmental concerns.

The Sandy River Recycling Association (SRRA), a regional non-profit recycling cooperative of 21 municipalities in Franklin County, is the municipal composting operations 'poster child'. In 2005, the SRRA, with a $30,000 state grant, constructed a composting facility at their Farmington location and began accepting food wastes from the University of Maine at Farmington, Franklin Memorial Hospital, the Farmington Fairgrounds and the Mallet elementary school in Farmington. Now in its sixth year of operation, the project is a licensed composting facility that has expanded its services to the local schools and is now exploring plans to offer food scrap collection and composting services to area businesses. The end product, *Sandy River Compost*, is currently available and distributed to local residents and landscape businesses.

The Office used the successful Sandy River pilot project to launch other food waste composting initiatives. Beginning in the fall of 2009 and continuing throughout 2010, the Office, Department, and SRRA staff revived their "road show presentation" and held eight workshops and meetings throughout Maine to promote organics diversion and composting.

In August of 2010, a two-day 'specialty compost school' was offered by the Maine Compost Team at the University of Maine Highmoor Farm in Monmouth. The Team, which also is responsible for the Maine Compost School, is comprised of a representative from the Department of Agriculture, Department of Environmental Protection, State Planning Office and the University Cooperative Extension. Eighteen teachers, school staff and other interested parties attended the training, which included both classroom instruction, hands-on exposure to composting and construction of backyard composting systems. The training will be offered again in June of this year.

A number of institutions in Maine are successfully composting unwanted food discards, including: the University of Maine, Bowdoin College, Bates College, and others. There has been increased interest by other institutions as well as some public programs in collecting food waste and either composting it themselves or utilizing the services of another for the actual

composting. Curbside collection of food discards has been considered by at least one Maine regional program, but that initiative is presently on hold.

Conclusion:

The next step will be to develop municipal programs and systems with funding for capital expenses and technical assistance, in order to further the organics diversion efforts. In the meantime, the State will continue educating institutions and municipalities on the value of composting food wastes.

Question 3: Household Hazardous Waste

> *"The State Planning Office mentioned in their presentation to the Committee that only an estimated 5% of household hazardous waste (HHW) is disposed of properly. The Committee was interested in addressing this issue and asked the DEP to include a discussion of fees on the sale of specific household hazardous waste items in its next product stewardship report to the Committee." (From the Minutes of the Joint Standing Committee on Natural Resources Meeting, June 22, 2010.)*

Background:

Maine has employed three strategies in the past 15 years to reduce the toxicity of the waste stream: permanent regional collection sites; one-day collection events; and long-term reduction of toxics through a product stewardship management approach.

The first of these was the banning of disposal of certain toxic products, beginning with rechargeable batteries and expanding to include mercury added products, fluorescent lights, cathode ray tube and electronic devices, and cell phones, requiring manufacturers to take responsibility for properly managing their products at the end of their useful lives. Maine was one of the first states in the nation to ban these products with toxic materials. The Office and Maine DEP jointly provided training and education to municipal staff in the management of these wastes, and the Office has provided several hundred thousand dollars in grant funds to assist municipal programs in constructing appropriate storage and containment systems for these waste products.

The 'Product Stewardship Initiative' was further enhanced in 2010 when Maine enacted a Product Stewardship Framework law which affirms product stewardship programs as an integral part of Maine's solid waste management strategy. As of January 15, the DEP has

released its report *Implementing Product Stewardship in Maine*. In their report, DEP lists 19 product categories suitable for product stewardship, and proposes three categories (architectural paint, unused pharmaceuticals and medical sharps) for immediate consideration for product stewardship programs.

The second strategy is state support for municipalities that hold one-day HHW collection events for residents; this is typically an annual service, though some municipalities offer both a spring and fall event. Small state grants of up to $5,000 have been made to municipal programs to support these collections, where a licensed hazardous waste management company oversees the collection and is responsible for the appropriate disposal of collected materials. Often, unwanted prescription medications are also accepted at these one day events. This approach has been modestly successful, but is limited by the fact less than a majority of residents will participate in annual events where they must personally deliver their toxic waste.

The third strategy was to identify and work with a public entity to build and be responsible for a regional HHW collection site, where residents, businesses and municipalities could drop off unwanted or unused household toxics on an on-going basis. The Androscoggin Valley Council of Governments and the City of Portland have been the two entities that have accepted this responsibility, each providing a permanent site for the 'drop-off' of HHW and the management of those toxic wastes by a licensed hazardous waste management company. The toxic wastes are then transported to licensed disposal or processing facilities.

Conclusion:

When the first two permanent regional HHW collection sites were built, the State Planning Office had a vision for developing a collection site in every major region of the State, in order to more appropriately provide management of unwanted toxic products for Maine residents. However, the scarcity of bond funds to support development of additional permanent HHW facilities, difficulty in securing public entities to 'host' these sites, combined with the emergence of product stewardship initiatives, has caused us to change from that initial strategy: therefore, we suggest that:

Municipal events to collect HHW should continue in the short term, while the product stewardship programs are ramped up and become widely available. Because these product stewardship programs must be vetted and launched separately for each product category, it will take a number of years to fully implement product stewardship for all of the household hazardous wastes generated by Maine residents. Therefore, the State Planning Office suggests that municipal collection HHW continue and be supported by the State for products that have not yet been integrated into the product stewardship program; perhaps have this municipal

HHW collection program support have a sunset date in six to eight years. The funding for these 'day collections' would be provided by the Maine Solid Waste Management Fund or by some other source.

Question 4: Collaboration between SPO and DEP

> *"The Committee discussed a concern that the DEP has certain roles related to recycling but is not involved in development of the solid waste management and recycling plan. The Committee would like to see more collaboration between the agencies in development of the state plan and when legislation related to recycling comes before the Committee, they would like to hear from both agencies." (Minutes of the Joint Standing Committee on Natural Resources Meeting, June 22, 2010.)*

How the State Planning Office Develops the State's Solid Waste Management and Recycling Plan:

State law directs SPO to consult with DEP and interested persons when it develops the five-year, state waste management plan (38 MRSA §2123-A):

1. ***Consultation.*** *In developing the state plan, the office shall consult with the department. The office shall solicit public input and may hold hearings in different regions of the State.*
2. ***Revisions.*** *The office shall revise the analysis by January 1, 1998 and every 5 years after that time to incorporate changes in waste generation trends, changes in waste recycling and disposal technologies, development of new waste generating activities and other factors affecting solid waste management as the office finds appropriate.*

The plan is a policy document designed to provide an overall approach for implementing the waste management hierarchy. When developing the state plan, the Office consults with the Department. It also uses the Solid Waste Management Advisory Council to solicit input from interested persons and public representatives. The Advisory Council is comprised of members from local government, public and private recycling, waste-to-energy, and landfill industries, environmental organizations, and the public. The Department sits on the council as an ex-officio member.

In drafting the 2009 state plan, for example, the Office shared drafts and met with DEP representatives three times. Their suggested changes such as removing a proposal to establish a framework for reducing toxics in our waste stream (because of the forthcoming product stewardship legislation), rewriting possible future waste management scenarios, and changing how some of the materials were presented in the document were largely incorporated

verbatim. The Office also asked DEP to help write the section of the plan that would guide public benefit determinations. The Solid Waste Management Advisory Council met and reviewed three drafts of the 2009 plan.

The Office finds it both helpful and productive to consult with the Department on the contents of the plan. According to our statutory directive, the report reflects the best judgment of the State Planning Office, while taking into account the views of many stakeholders. It is not a consensus document, in the sense that every stakeholder agrees with or signs off on every point made in the report. We respect the need to consult with the Department and others, and do our best to represent a balance of views in the report.

Solid Waste Capacity Report:

The Legislature also directs the State Planning Office to take a long-term view of the state waste disposal needs and to analyze the expected lifespan of existing disposal capacity in Maine in order to determine future capacity needs. The Maine Revised Statutes Annotated, Title 38, section 2123-A directs SPO as follows:

> *By January 1, 2008 and annually thereafter, the office shall submit a report to the joint standing committee of the Legislature having jurisdiction over natural resources matters, the Governor and the department setting forth information on statewide generation of solid waste, statewide recycling rates and available disposal capacity for solid waste.*

The Office reports on available disposal capacity and makes projections about the lifespan of that capacity. It is based on commercial data collected by DEP and municipal data collected by SPO and is intended to inform policy-makers on their decisions about future capacity investment.

While the numbers are what they are, the Office routinely solicits input on the assumptions it makes in projecting landfill capacity needs. It talks with municipal and industry representatives about trends and it solicits input from the Solid Waste Management Advisory Council. In 2009, the council urged the Office to reduce its waste generation growth projections, based on a slowing economy. In response to this feedback, the Office now provides three projections using three different growth rates.

Legislation:

The Governor's office assigns a lead agency to represent the administration on each bill. The past administration required that only one state agency represent it when presenting testimony. Nevertheless, state agencies routinely discuss and collaborate on strategy, approach

and testimony for bills in areas of mutual interest. This has been the case on numerous recycling and solid waste bills.

Item 5: Composting Leaf and Yard Waste

Analysis of a ban on disposal of leaf and yard waste:

> *Leaf and yard waste could be composted and recycled via a disposal ban, provided that residents and businesses could continue to compost leaf and yard waste on their own property, and provided that the ban be voluntary in towns with <2000 in population. The Committee did not ask a follow up question on this, but the Office offers an analysis of this policy option below, for Committee consideration.*

Rationale:

Similar to the rationale for a ban on corrugated cardboard disposal above, the rationale for banning disposal of leaf and yard waste is threefold:

1. To reduce the amount of waste requiring disposal, thus delaying the development of additional landfill disposal capacity, which is estimated to be currently approximately $25 per cubic yard;
2. To increase the statewide recycling rate by approximately 2 to 3 percentage points; and,
3. To avoid solid waste disposal costs for the leaf and yard waste.

Current Situation:

While there are approximately 80 municipally operated leaf and yard waste compost facilities in operation, leaf and yard waste is still being disposed of at waste to energy facilities and at landfills. These organics have low heat value and occupy the limited space within landfills. By diverting these organics to composting facilities, municipalities can avoid the disposal costs associated with hauling this waste stream off and instead compost it at a local facility.

Composting facilities for leaf and yard waste are fairly simple to build and operate. No impervious surface is needed for composting these materials and they only need to be 'turned' a minimum of four times a year. Typically, the biggest challenge is keeping contamination of the delivered organics to a minimum. Provide a site, oversight of deliveries and the biological decomposition will create a product that can be used by residents, the municipality or commercial users.

The cost of land filling leaf and yard waste is $93/ton. If a municipality were able to divert 100 tons of organics from the waste stream to its composting facility, approximately $9,300 in disposal costs would be avoided.

With 160 towns with populations of over 2000, approximately 80 additional composting sites may need to be developed. At an average construction cost of $11,000 per site, $880,000 would be needed to fully fund the ban.

Impact:

Currently 24 states have a ban on disposal of leaf and yard debris. A ban on the disposal of leaf and yard waste could divert 16,000 tons of organics annually from disposal, raising the State's recycling rate by 2 to 3 percentage points.

Municipalities, once the program is established and recovering 16,000 tons per year, would be avoiding disposal costs of approximately $1.48m per year, after the initial expense of $880,000 to fully develop the needed composting sites.